

116-Gbit/s PAM4 BERT with Industry-Best High Input Sensitivity Performance for 400GbE/800GbE

PAM4 ED MU196040B

Signal Quality Analyzer-R MP1900A series



Outline

Next-generation data centers are developing 100-Gbit/s per single-lane transmission technology for commercial deployment of 400-GbE services, resulting in increased demand for 53.125-Gbaud 4- and 8-lane PAM4 BER tests to evaluate 400-Gbit/s and future 800-Gbit/s PAM4 transceivers and devices.

The Signal Quality Analyzer-R MP1900A using the PAM4 ED MU196040B module with the world's highest input sensitivity and built-in Clock Recovery and Equalizer functions for high-speed PAM4, supports more accurate BER evaluations of PAM4 interfaces at speeds up to 116 Gbit/s using the Auto-search function simplifying BER measurements of PAM4 signals at complex measurement conditions, the Margin Measurement function utilizing the high-sensitivity ED, and the FEC Evaluation function required by 26G/53G PAM4 transmissions.

[Target Applications] 100/200/400/800GbE, CEI-112G-VSR

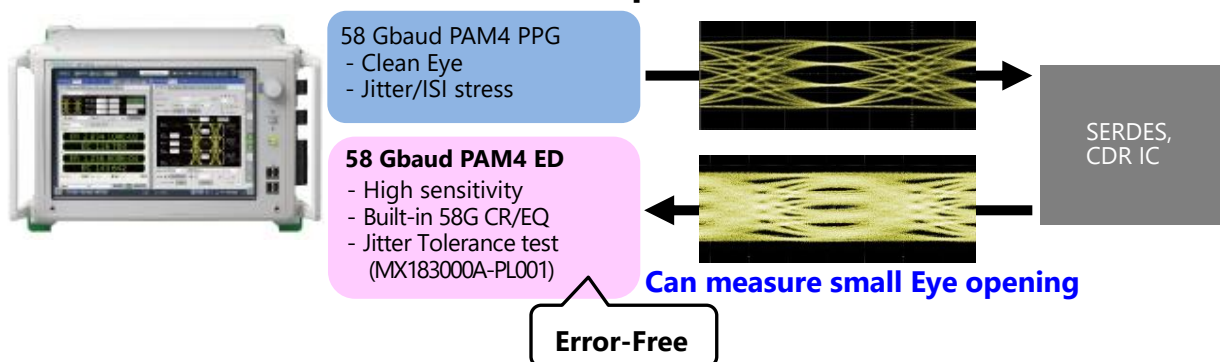
Features

- **High-performance BERT for 116-Gbit/s PAM4 error-free measurement**
Simplifies previously difficult PAM4 error troubleshooting
- **Industry-leading high input sensitivity performance of 36 mV EH@53.125 Gbaud**
Supports more accurate evaluations up to 116-Gbit/s PAM4
- **All-in-one 58-Gbaud PAM4 receiver test solution with built-in Clock Recovery and Equalizer functions**
Supports faster testing and debugging with easy measurement system configuration
- Wideband operation: 2.4 Gbaud to 64.2 Gbaud for NRZ, 2.4 Gbaud to 58.2 Gbaud for PAM4
- Supports CEI-112G-VSR Stressed Receiver Input Test
- Built-in 58-Gbaud PAM4 Clock Recovery
- PAM4 Symbol Capture function, FEC Symbol Capture function
- Equalizer function, Bathtub function, Eye Contour function
- Multichannel measurement (up to 4ch ED/unit)

Typical Specifications

Item	Specification
Operation Baud Rate	2.4 Gbaud to 32.1 Gbaud (Opt-001) 2.4 Gbaud to 64.2 Gbaud NRZ/2.4 Gbaud to 58.2 Gbaud PAM4 (Opt-002)
Number of Inputs	2 (Data, xData)
Input Sensitivity	23 mV (Eye Height) typ. at 26.5625 Gbaud 36 mV (Eye Height) typ. at 53.125 Gbaud
Clock Recovery Range	2.4 Gbaud to 29 Gbaud (Opt-021) 2.4 Gbaud to 32.1 Gbaud (Opt-022) 51 Gbaud to 58.2 Gbaud (extension Opt-023)
Equalizer	DFE (typ. 1.4 dB) + Low-frequency Equalizer (typ. 2 dB, response at lower than 1 GHz controlled) with Auto-search function (Op-011)
Capture/Automatic Measurements	FEC Symbol Capture, Bathtub, Eye Contour
SER Measurement	Supported (Opt-041)
Input Connector	V-connector (f)

Jitter Tolerance Measurement Setup



MU196040B Ordering Information

Model	Name
MU196040B	PAM4 ED
MU196040B-001	32G baud (2.4 to 32.1 Gbaud)
MU196040B-002	58G baud (2.4 to 64.2 Gbaud NRZ/ 2.4 to 58.2 Gbaud PAM4)
MU196040B-011	Equalizer
MU196040B-021	29G baud Clock Recovery (2.4 to 29 Gbaud)
MU196040B-022	32G baud Clock Recovery (2.4 to 32.1 Gbaud)
MU196040B-023	58G baud Clock Recovery Extension (51 to 58.2 Gbaud)
MU196040B-041	SER Measurement

MP1900A Main Unit, PPG, and Software for Jitter Tolerance Test

MP1900A	Signal Quality Analyzer-R
MU196020A	PAM4 PPG (Opt-002, 011, 040, 042)
MU181000B	12.5GHz 4Port Synthesizer
MU181500B	Jitter Modulation Source
MX183000A-PL001	Jitter Tolerance Test